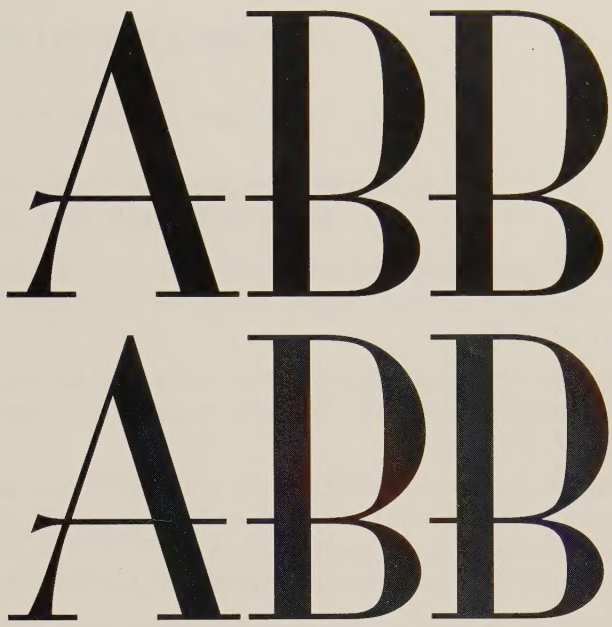
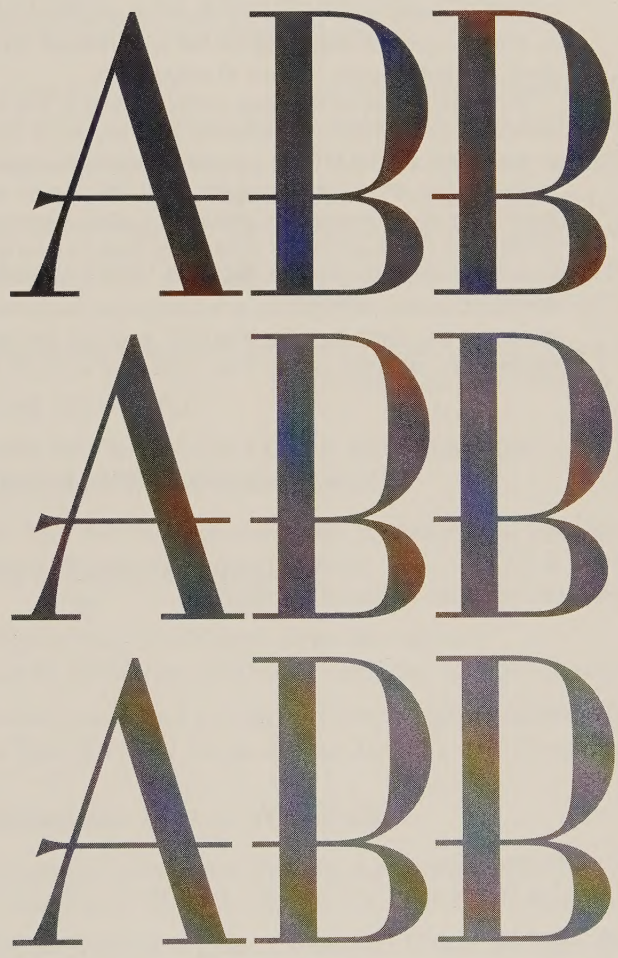


Archives of Biochemistry and Biophysics



Volume 346, 1997

ACADEMIC PRESS

http://www.apnet.com

Copyright © 1997 by Academic Press

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the Publisher. *Exceptions:* It is the policy of Academic Press that authors need not obtain permission in the following cases only: (1) to use their original figures or tables in their future works; (2) to make copies of their papers for use in their classroom teaching; and (3) to include their papers as part of their dissertations.

The appearance of the code at the bottom of the first page of an article in this journal indicates the Publisher's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (222 Rosewood Drive, Danvers, Massachusetts 01923), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1997 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0003-9861/97 $25.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

CONTENTS OF VOLUME 346

Number 1, October 1, 1997

BIOLOGICAL OXIDATIONS: FREE RADICALS, NITRIC OXIDE, ANTIOXIDANTS, AND P450 REACTIONS

Protein Modification by Lipid Peroxidation Products: Formation of Malondialdehyde-Derived N^{ϵ}-(2-Propenal)lysine in Proteins *Koji Uchida, Kensuke Sakai, Koichi Itakura, Toshihiko Osawa, and Shinya Toyokuni* 45

Caloric Restriction Attenuates Dityrosine Cross-Linking of Cardiac and Skeletal Muscle Proteins in Aging Mice *Christiaan Leeuwenburgh, Peter Wagner, John O. Holloszy, Rajindar S. Sohal, and Jay W. Heinecke* 74

Expression of Cytochrome P450 3A7 in *Escherichia coli:* Effects of 5′ Modification and Catalytic Characterization of Recombinant Enzyme Expressed in Bicistronic Format with NADPH-Cytochrome P450 Reductase *Elizabeth M. J. Gillam, Rebecca M. Wunsch, Yune-Fang Ueng, Tsutomu Shimada, Paul E. B. Reilly, Tetsuya Kamataki, and F. Peter Guengerich* 81

Elevated Ferritin Production, Iron Containment, and Oxidant Resistance in Hemin-Treated Leukemia Cells *Fubao Lin and Albert W. Girotti* 131

Progesterone and Testosterone Hydroxylation by Cytochromes P450 2C19, 2C9, and 3A4 in Human Liver Microsomes *Hiroshi Yamazaki and Tsutomu Shimada* 161

DNA REPLICATION, RECOMBINATION, AND REPAIR; TRANSCRIPTION; MECHANISMS OF ONCOGENIC TRANSFORMATION

Isolation and Characterization of *Xenopus laevis xSox-B1* cDNA *Yukinao Sakai, Yoshiki Hiraoka, Masahiro Konishi, Motoyuki Ogawa, and Sadakazu Aiso* 1

Aryl Hydrocarbon (Ah) Nonresponsiveness in Estrogen Receptor-Negative MDA-MB-231 Cells Is Associated with Expression of a Variant Arnt Protein *Cody L. Wilson, Jane Thomsen, Debie J. Hoivik, Mark T. Wormke, Larry Stanker, Carol Holtzapple, and Stephen H. Safe* 65

Further Characterization of the Major and Minor Rabbit *FMO1* Promoters and Identification of both Positive and Negative Distal Regulatory Elements *Zhaohui Luo and Ronald N. Hines* 96

Two Sp Sites Are Important *cis* Elements Regulating the Upstream Promoter Region of the Gene for Rat Type I Hexokinase *Wenjing Liu and John E. Wilson* 142

ENZYME STRUCTURE AND MECHANISMS; CELLULAR REGULATION; PHOSPHORYLATION AND DEPHOSPHORYLATION

Acarbose and 1-Deoxynojirimycin Inhibit Maltose and Maltooligosaccharide Hydrolysis of Human Small Intestinal Glucoamylase–Maltase in Two Different Substrate-Induced Modes *Dirk Breitmeier, Stephan Günther, and Herbert Heymann* 7

Purification, Characterization, and Amino Acid Sequencing of DNase γ from Rat Spleen *Daisuke Shiokawa, Akihiro Iwamatsu, and Sei-ichi Tanuma* 15

Purification and Characterization of Thylakoid Membrane-Bound Inorganic Pyrophosphatase from *Spinacia oleracia* L. *Shih Sheng Jiang, Lin Lin Fan, Su Jing Yang, Soong Yu Kuo, and Rong Long Pan* 105

LIPIDS, LIPID MEDIATORS, AND GLYCOLIPIDS

RPE65, the Major Retinal Pigment Epithelium Microsomal Membrane Protein, Associates with Phospholipid Liposomes *Ekaterini Tsilou, Christian P. Hamel, Shirley Yu, and T. Michael Redmond* 21

Adriamycin and Daunomycin Semiquinone Membrane/Buffer Partition Constants Using the Spin-Broadening Technique *Antonio E. Alegría and Glysette Santiago* 91

MEMBRANE PROTEINS AND TRANSPORT; INTRACELLULAR SIGNALS; CYTOKINES AND RECEPTORS

Potassium Collapses the ΔP in Yeast Mitochondria While the Rate of ATP Synthesis Is Inhibited Only Partially: Modulation by Phosphate *Vicente Castrejón, Carmen Parra, Rafael Moreno, Antonio Peña, and Salvador Uribe* 37

Structural Diversity among Subtypes of Small-Conductance Ca^{2+}-Activated Potassium Channels *Jonathan D. F. Wadsworth, Silvia Torelli, Kevina B. Doorty, and Peter N. Strong* 151

PLANT BIOCHEMISTRY AND MOLECULAR BIOLOGY

Wheat Germ Initiation Factor 2 (WG·eIF2) Decreases the Inhibition in Protein Synthesis and eIF2B Activity of Reticulocyte Lysates Mediated by eIF2α Phosphorylation *Vattem M. Krishna, Narahari Janaki, and Kolluru V. A. Ramaiah* 28

Molecular Analysis of Carotenoid Cyclase Inhibition *Florence Bouvier, Alain d'Harlingue, and Bilal Camara* 53

PROTEIN STRUCTURE AND FUNCTION; PROTEASES, PROTEIN TURNOVER, AND POST-TRANSLATIONAL PROCESSING

Expression Cloning of a Novel Farnesylated Protein, RDJ2, Encoding a DnaJ Protein Homologue *Douglas A. Andres, Haipeng Shao, Dean C. Crick, and Brian S. Finlin* 113

Expression and Purification of Recombinant Rhinovirus 14 3CD Proteinase and Its Comparison to the 3C Proteinase *Gerard J. Davis, Q. May Wang, Gregory A. Cox, Robert B. Johnson, Mark Wakulchik, Crystal A. Dotson, and Elcira C. Villarreal* 125

Number 2, October 15, 1997

RESEARCH REPORT

Stability of *Escherichia coli* Alanyl-tRNA Synthetase Quaternary Structure under Increased Pressure *Satish M. Sood, Kelvin A. W. Hill, and Charles W. Slattery* 322

BIOLOGICAL OXIDATIONS: FREE RADICALS, NITRIC OXIDE, ANTIOXIDANTS, AND P450 REACTIONS

Release of Iron from Ferritin Storage by Redox Cycling of Stilbene and Steroid Estrogen Metabolites: A Mechanism of Induction of Free Radical Damage by Estrogen *Samuel Wyllie and Joachim G. Liehr* 180

Nitrobenzimidazoles as Substrates for DT-Diaphorase and Redox Cycling Compounds: Their Enzymatic Reactions and Cytotoxicity *Jonas Šarlauskas, Eglė Dičkancaitė, Aušra Nemeikaitė, Žilvinas Anusevičius, Henrikas Nivinskas, Juan Segura-Aguilar, and Narimantas Čėnas* 219

The Role of NAD(P)H:Quinone Oxidoreductase in Quinone-Mediated p21 Induction in Human Colon Carcinoma Cells *Xiao-Bo Qiu and Enrique Cadenas* 241

Superoxide-Dependent Peroxidase Activity of H48Q: A Superoxide Dismutase Variant Associated with Familial Amyotrophic Lateral Sclerosis *Stefan I. Liochev, Li Li Chen, Robert A. Hallewell, and Irwin Fridovich* 263

Distal Site and Surface Mutations of Cytochrome P450 1A2 Markedly Enhance Dehalogenation of Chlorinated Hydrocarbons *Kazutaka Yanagita, Ikuko Sagami, and Toru Shimizu* 269

BIOPHYSICAL CHEMISTRY AND X-RAY CRYSTALLOGRAPHY

Interaction of Spermine with Dimyristoyl-L-α-phosphatidyl-DL-glycerol Multilamellar Liposomes *Roberto Stevanato, Anna Wisniewska, and Federico Momo* 203

DNA REPLICATION, RECOMBINATION, AND REPAIR; TRANSCRIPTION; MECHANISMS OF ONCOGENIC TRANSFORMATION

Interactions of a High Mobility Group-like Protein with Human Mitochondrial DNA *Huayan Wang, Bernard D. Lemire, Carol E. Cass, Joel H. Weiner, Marek Michalak, Dyal Singh, and Larry Fliegel* 193

ENZYME STRUCTURE AND MECHANISMS; CELLULAR REGULATION; PHOSPHORYLATION AND DEPHOSPHORYLATION

Enzyme Activity Alteration by Cadmium Administration to Rats: The Possibility of Iron Involvement in Lipid Peroxidation *Elisabetta Casalino, Cesare Sblano, and Clemente Landriscina* 171

GLYCOCONJUGATES AND OLIGOSACCHARIDES; PROTEOGLYCANS AND EXTRACELLULAR MATRICES

Interaction of Fibroblast Growth Factor-1 and Related Peptides with Heparan Sulfate and Its Oligosaccharides *Jonathan R. Fromm, Ronald E. Hileman, John M. Weiler, and Robert J. Linhardt* 252

LIPIDS, LIPID MEDIATORS, AND GLYCOLIPIDS

Activation of Liver Mitochondrial Phospholipase A2 by Superoxide *M. Madesh and K. A. Balasubramanian* 187

MEMBRANE PROTEINS AND TRANSPORT; INTRACELLULAR SIGNALS; CYTOKINES AND RECEPTORS

Inactivation of the *Kluyveromyces lactis* H^+-ATPase by Dicyclohexylcarbodiimide: Binding Stoichiometry and Effect of Nucleophiles *Isabel Velázquez, Federico Martínez, and Juan Pablo Pardo* 294

Kinase Activity of EnvZ, an Osmoregulatory Signal Transducing Protein of *Escherichia coli* *Linda J. Kenney* 303

Intracellular Localization of Na,K-ATPase $\alpha 2$ Subunit Mutants *Maddalena V. Coppi and Guido Guidotti* 312

PLANT BIOCHEMISTRY AND MOLECULAR BIOLOGY

In Vitro Photoinactivation of Catalase Isoforms from Cotyledons of Sunflower (*Helianthus annuus* L.) *Norbert Grotjohann, Annette Janning, and Rainer Eising* 208

PROTEIN STRUCTURE AND FUNCTION; PROTEASES, PROTEIN TURNOVER, AND POST-TRANSLATIONAL PROCESSING

Structural Investigation of Tet Repressor Loop 154–167: A Time-Resolved Fluorescence Study of Three Single Trp Mutants *Patrizia Alberti, Elisa Bombarda, Martin Kintrup, Wolfgang Hillen, Hans Lami, Etienne Piémont, Silvia M. Doglia, and Marie Chabbert* 230

Human Erythrocyte Protein L-Isoaspartyl Methyltransferase: Heritability of Basal Activity and Genetic Polymorphism for Thermal Stability *Cynthia L. David, Carol L. Szumlanski, Christopher G. DeVry, Jeong Ok Park-Hah, Steven Clarke, Richard M. Weinshilboum, and Dana W. Aswad* 277

Redox-Dependent Conformational Changes Are Common Structural Features of Cytochrome c from Various Species *Julia F. Calvert, Jennifer L. Hill, and Aichun Dong* 287

AUTHOR INDEX FOR VOLUME 346 324

NOTICE

The Subject Index for Volume 346 will appear in the December 15, 1997, issue as part of a cumulative index for the year 1997.